Comparisons of Job Characteristics

Focus Occupation: Hydrologists (19-2043)
Associated Occupation: Chemists (19-2031)

Compare Knowledge
Compare Skills
Compare Abilities
Compare Detailed Work Activities
Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 62

Focus Occupation: Hydrologists (19-2043)
Associated Occupation: Chemists (19-2031)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Chemistry	4.8	21.8	15.6	<<	Extensive education and/or training may be required
Mathematics	9.2	17.0	17.7	0	Current knowledge level may be sufficient
Computers and Electronics	8.4	13.6	13.5	0	Current knowledge level may be sufficient
Production and Processing	6.0	11.3	5.3	<<	Extensive education and/or training may be required
Physics	4.3	9.1	15.7	>>	Current knowledge level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 85

Focus Occupation: Hydrologists (19-2043)
Associated Occupation: Chemists (19-2031)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Science	4.5	17.3	13.0	<<	Extensive development of skills in this area may be required
Reading Comprehension	10.7	15.7	13.9	<	A higher skill level may be required
Complex Problem Solving	9.1	12.3	11.9	0	Current skill level may be sufficient
Mathematics	6.2	11.4	12.8	>	Skill level is likely sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities

Similarity of Focus Occupation to Associated Occupation: 94

Focus Occupation: Hydrologists (19-2043)
Associated Occupation: Chemists (19-2031)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Oral Comprehension	12.5	15.9	14.2	<	Some improvement in abilities may be required
Written Comprehension	11.0	14.9	14.6	0	Current ability level may be sufficient
Inductive Reasoning	10.2	13.8	14.6	0	Current ability level may be sufficient
Category Flexibility	9.0	13.6	11.2	<	Some improvement in abilities may be required
Deductive Reasoning	10.6	13.6	13.4	0	Current ability level may be sufficient
Near Vision	11.1	13.5	11.9	<	Some improvement in abilities may be required
Information Ordering	9.9	12.8	11.6	<	Some improvement in abilities may be required
Mathematical Reasoning	6.3	12.2	13.8	>	Current ability level is likely sufficient
Number Facility	6.3	11.9	10.8	<	Some improvement in abilities may be required
Flexibility of Closure	7.8	10.7	12.0	>	Current ability level is likely sufficient
Visual Color Discrimination	6.4	9.6	6.7	<<	Extensive improvement in abilities may be required
Memorization	5.6	7.9	6.2	<	Some improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 86

Focus Occupation: Hydrologists (19-2043)
Associated Occupation: Chemists (19-2031)

Work Activities	Exclusivity of Activity
Adhere to safety procedures	12
Advise clients or customers	19
Advise governmental or industrial personnel	28
Analyze scientific research data or investigative findings	27
Classify plants, animals, or other natural phenomena	69
Collect scientific or technical data	30
Collect statistical data	47
Communicate technical information	4
Conduct laboratory research or experiments	57
Confer with research personnel	50
Confer with scientists	54
Develop or maintain databases	30

Develop plans for programs or projects	31
Develop policies, procedures, methods, or standards	21
Develop scientific or mathematical hypotheses, theories, or laws	62
Develop tables depicting data	33
Direct and coordinate scientific research or investigative studies	27
Direct implementation of new procedures, policies, or programs	60
Explain complex mathematical information	30
Forecast or predict phenomena based upon research data	71
Maintain records, reports, or files	5
Make decisions	24
Make presentations	13
Perform statistical analysis in physical science or geological research	71
Plan scientific research or investigative studies	48
Prepare reports	8
Prepare technical reports or related documentation	22
Present research papers or dissertations on physical science issues	78
Recommend further study or action based on research data	60
Record test results, test procedures, or inspection data	48
Resolve engineering or science problems	46
Understand properties of gases or liquids	78
Use chemical testing or analysis procedures	54
Use computers to enter, access or retrieve data	3
Use knowledge of investigation techniques	16
Use library or online Internet research techniques	21
Use mathematical or statistical methods to identify or analyze problems	30
Use physical science research techniques	68
Use quantitative research methods	35
Use relational database software	26
Use scientific research methodology	21
Use spreadsheet software	18
Use word processing or desktop publishing software	17
Write research or project grant proposals	33
Write scholarly or technical research papers	36

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 64

Focus Occupation: Hydrologists (19-2043)
Associated Occupation: Chemists (19-2031)

Tools and Technologies	Exclusivity
Business function specific software	1
Cameras	2
Chemical evaluation instruments and supplies	10

Computer printers	2
Computers	1
Content authoring and editing software	1
Data management and query software	1
Development software	4
Electrochemical measuring instruments and accessories	9
General laboratory glassware and plasticware and supplies	13
Indicating and recording instruments	2
Industry specific software	1
Laboratory heating and drying equipment	13
Laboratory ovens and accessories	15
Laboratory pumps and tubing	23
Light and wave generating and measuring equipment	4
Liquid and gas flow measuring and observing instruments	15
Network applications software	1
Pipettes and liquid handling equipment and supplies	16
Respiratory protection	6
Spectroscopic equipment	10
Temperature and heat measuring instruments	6
Weight measuring instruments	7

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.